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Notes:

- 1. Untranslatable words are replaced with asterisks (****).
- 2. Texts in the figures are not translated and shown as it is.

Translated: 18:18:38 JST 01/10/2006

Dictionary: Last updated 12/22/2005 / Priority:

CLAIMS

[Claim(s)]

[Claim 1] Digital broadcast is received. The signal of one transponder is chosen from the received digital broadcast signal. The signal of one channel is chosen from the signal of the one above-mentioned transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs. In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of this receiving terminal equipment When the control signal which should change the channel chosen by the above-mentioned transport decoder to another channel from the channel chosen now is received The digital broadcast record system characterized by having a detection means to detect whether the above-mentioned recording equipment is recording the signal of the channel chosen now, and an alarm display means to display this when this detection means detects what currently the above-mentioned recording equipment is recording.

[Claim 2] Digital broadcast is received. The signal of one transponder is chosen from the received digital broadcast signal. The signal of two or more channels is chosen from the signal of the one above-mentioned transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder outputted from a port different, respectively and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs. In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of this receiving terminal equipment When the control signal which should change the transponder chosen by the above-mentioned tuner to another transponder from the transponder chosen now is received A detection means to detect whether the above-mentioned recording equipment is recording the signal of one channel of the transponders chosen now, The digital broadcast record system characterized by having an alarm display means to display this when this detection means detects what currently the above-mentioned recording equipment is recording.

[Claim 3] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. An output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A

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predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. The 1st timer of the above and the 2nd timer at least [one of timers] The digital broadcast record system characterized by holding the reservation information reserved in the timer of another side.

[Claim 4] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When the 1st timer of the above has the input of program recording reservation The digital broadcast record system characterized by having a detection means to detect whether the reservation execution time of the program recording reservation concerned is compared with the reservation execution time of the program recording reservation already performed by the 2nd timer of the above, and duplication of program recording time arises.

[Claim 5] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When the 2nd timer of the above has the input of program recording reservation The digital broadcast record system characterized by having a detection means to detect whether the reservation execution time of the program recording reservation already performed by the reservation execution time, the 1st timer of the above, or the 2nd timer of the program recording reservation concerned and program display reservation is compared, and duplication of reservation execution time arises.

[Claim 6] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the

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signal of the transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs. In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of the above-mentioned receiving terminal equipment A detection means to detect whether it is in a state with the above-mentioned receiving terminal equipment able to output the signal of the recording purpose program just before the recording start of the program recording reserved by the timer which performs program recording reservation of digital broadcast, and the above-mentioned timer. The digital broadcast record system characterized by having an alarm display means to display this when it detects that it is in a state with the above-mentioned receiving terminal equipment unable for this detection means to output the signal of the recording purpose program.

Claim 7] The signal of a predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When program recording reservation of digital broadcast is performed to the 2nd timer of the above The check of whether there is no broadcast time of the recording purpose program just before the recording start by the program recording reservation concerned, and there is any change in a broadcast channel is performed to the above-mentioned receiving terminal equipment. It is the digital broadcast record system characterized by having a means to change the information on the program recording reservation concerned of the 2nd timer of the above when there is change.

Claim 8] The signal of a predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast

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record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. An EPG information storage means for it to be prepared in the above-mentioned recording equipment, to acquire EPG information from the above-mentioned receiving terminal equipment, and to memorize this. When it detects that this EPG information storage means was searched and there was change to the broadcast time or the broadcast channel of the digital program by which program recording reservation is performed to the 2nd timer of the above. The digital broadcast record system characterized by having a means to change the information on the program recording reservation concerned of the 2nd timer of the above.

Claim 9] The signal of a predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When the broadcasting hours of the digital program which the above-mentioned receiving terminal equipment under present recording outputs in said recording equipment extend, It is detected whether the time to the end of a program of the program concerned overlaps the broadcasting hours of the program by which program recording reservation or program display reservation is made at the 1st or 2nd timer of the above. The digital broadcast record system characterized by having a control means to perform the recording or a display of a program according to a predetermined priority when overlapping.

DETAILED DESCRIPTION

Detailed Description of the Invention]

0001]

[Field of the Invention] This invention relates to the digital broadcast record system which consists of recording equipments, such as VTR which records the reproduction signal outputted from the receiving terminal equipment (it is henceforth called Set Top Box =STB for short) which receives digital broadcast and outputs that reproduction signal, and this STB.

0002]

[Description of the Prior Art] Drawing 16 is the figure showing the digital broadcast record system which consists of recording equipments 130, such as VTR which records the reproduction signal outputted from Set Top Box (STB) 110 which receives the conventional digital broadcast and outputs the reproduction signal, and STB110 on the Records Department, and is set to a figure. The antenna with which 111 receives digital broadcast, and 112 are the 1st tuner which chooses and outputs one of two or more transponders of the digital broadcast which the antenna

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11 received. The transport decoder which 113 chooses one of two or more channels contained in one transponder which a tuner 112 outputs, and is outputted, 114 is an AV decoder which reproduces and outputs the digital signal of the specific channel which the transport decoder 113 outputs to the image of an analog, and an audio signal. Moreover, 115 is the image of the digital signal which the transport decoder 113 outputs, or the analog which the AV decoder 114 outputs, and an output means to output an audio signal outside. 116 is a system controller which controls operation of the 1st tuner 112, the transport decoder 113, and the output means 115. 117 is a user input part into which a user inputs control signals, such as channel selection, program recording reservation, and program display reservation. 118 is the 1st timer which outputs the control signal for reservation execution to the system controller 116, when the program recording reservation from the user input part 117 and program display reservation are received, this is held and reservation time comes.

0003] Set Top Box (STB) 110 is constituted by the 1st tuner 112, the transport decoder 113, the AV decoder 114, the output means 115, the system controller 116, and the 1st timer 118. 120 is a monitor which receives the image of the analog which the AV decoder 114 outputs, and an audio signal, and displays and outputs an image and a sound. The antenna with which 131 receives analog broadcasting, and 132 are the 2nd tuner which chooses and outputs one of two or more channels of the analog broadcasting which the antenna 131 received. 133 is the Records Department which records the image of the digital signal which the transport decoder 113 outputted from the signal which the 2nd tuner 132 outputs, or the output means 115 of STB110 outputs, or the analog which the AV decoder 114 outputs, and an audio signal. 134 is the 2nd tuner 132 and a system controller which controls operation of the Records Department 133. 135 is a user input part into which a user inputs control signals, such as a recording start, a recording stop, and program recording reservation. 136 is the 2nd timer which outputs the control signal for reservation execution to the system controller 134, when the control signal from the user input part 135 is received; this is held and reservation time comes.

0004] Next, operation of the conventional digital broadcast record system is explained.

0005] A tuner 112 chooses and outputs one of two or more transponders which the antenna 111 received. The program of 4-6 channels is usually included in the transponder, and the transport decoder 113 chooses and extracts one of two or more channels contained in the transponder received from the tuner 112, and outputs this to the AV decoder 114. The AV decoder 114 reproduces the signal from the transport decoder 113 to an image and a sound, and outputs it to monitor 120 grade. When recording the program of digital broadcast, the signal which the transport decoder 113 outputs, or the signal outputted from the AV decoder 114 is outputted to recording equipment 130 by the output means 115, and recording equipment 130 records the received signal on the Records Department 133. The Records Department 133 performs digital record, when recording the signal which the transport decoder 113 outputs, and when recording the signal outputted from the AV decoder 114, it performs analog record. When recording digital broadcast using a timer While performing program recording reservation which includes information, including the start time of the program which asks for recording from the user input part 117, finish time, a broadcast channel, etc., in the 1st timer 118 by the side of STB110 program recording reservation which includes information, including the start time of recording, finish time, etc., in the 2nd timer 136 of recording equipment 130 from the user input part 135 is performed.

0006] The 1st timer 118 outputs the control signal for reservation execution to the system controller 116, when the program recording reservation information that it was inputted is held and managed and the start time of the recording purpose program comes. The system controller 116 controls the 1st tuner 112 and the transport decoder 113 according to the control signal from the 1st timer 118, and chooses the channel of the recording purpose program. The signal which the transport decoder 113 outputs, or the signal outputted from the AV decoder 114 is

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outputted to recording equipment 130 by the output means 115. On the other hand, by the recording equipment 130 side, when the 2nd timer 136 held and manages the recording reservation information that it was inputted and the start time of timed recording comes, the control signal for reservation execution is outputted to the system controller 134. the system controller 134 operates the Records Department 133 according to the control signal from the 2nd timer 136 — the signal from the output means 115 of STB110 — digital one — or analog record is carried out.

0007] In that in which the system controller of STB and the system controller of recording equipment operate independently like the conventional digital broadcast record system shown in drawing 16, respectively When recording a digital program by timer reservation, as mentioned above, both the timer by the side of STB and the timer by the side of recording equipment must be set up independently, respectively, and this serves as very troublesome work for a user. on the other hand — both the timer by the side of STB, and the timer by the side of recording equipment — although — while being able to perform registration of recording reservation of a digital program If it has composition which exchanges a control signal between the system controller of STB, and the system controller of recording equipment and is made to interlock both system controllers The timed recording of a digital program can be made by making program recording reservation with either the timer by the side of STB, and the timer by the side of recording equipment. When [namely,] program recording reservation is made at the timer by the side of STB The system controller by the side of STB embraces the control signal for the reservation execution which the timer by the side of STB outputs. Control the 1st tuner 112 and the transport decoder 113, and the channel of the recording purpose program is chosen. While outputting the signal which the transport decoder 113 outputs, or the signal outputted from the AV decoder 114 to recording equipment 130 by the output means 115 output a control signal to the system controller by the side of recording equipment, and the system controller by the side of recording equipment operates the Records Department 133 according to the control signal from the system controller by the side of STB — the signal from the output means 115 of STB110 — digital one — or analog record is carried out.

0008] When [moreover,] program recording reservation is made at the timer by the side of recording equipment The system controller by the side of recording equipment embraces the control signal for the reservation execution which the timer by the side of recording equipment outputs. the Records Department 133 — the signal from the output means 115 of STB110 — digital one — or while making it operate so that analog record may be carried out Output a control signal to the system controller by the side of STB, and the system controller by the side of STB controls the 1st tuner 112 and the transport decoder 113 according to the control signal from the system controller by the side of recording equipment, and chooses the channel of the recording purpose program. The signal which the transport decoder 113 outputs, or the signal outputted from the AV decoder 114 is outputted to recording equipment 130 by the output means 115. As mentioned above, the timed recording of a digital program is possible by performing program recording reservation for the system controller by the side of STB and recording equipment in an interlocking ***** digital broadcast record system to either the timer by the side of STB, or the timer by the side of recording equipment.

0009] [problem to be solved by the invention] Since the conventional digital broadcast record system is instituted as mentioned above and the output of the transport decoder of STB is used for both the monitor display and the output for recording, In the midst of recording the output from the output means of STB with recording equipment, the control signal which chooses a display channel from the user input part of STB is inputted. When the channel chosen by this control signal differs from the channel which the present transport decoder is choosing and outputting and the channel which a transport decoder chooses and outputs changes The output from the
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output means of STB also changes and un-arranging [that the program for which it asks, and a different program will be recorded] arises. Moreover, the time of onset of the program by which recording reservation was made arrives at a timer in the midst of carrying out the monitor display of the digital program. When the channel of this program by which recording reservation was made is a different channel from the program by which the present monitor display is carried out, When the channel which a transport decoder chooses and outputs for execution of recording reservation changes, un-arranging [that the program by which the monitor display is carried out will change suddenly] arises.

[0010] If a transport decoder is the thing of composition of outputting from a port which chooses the signal of two or more channels from the signal of one transponder, and is different, respectively here Since two different channels can be simultaneously outputted if the transponder is the same even if channels differ Although it does not produce above un-arranging, since the channel from which a transponder differs cannot be simultaneously outputted even if it is such a transport decoder, when the transponders of the channel of a monitor display and the output for recording differ, the same un-arranging it as **** will arise.

[0011] Moreover, [a timer does not have duplication as compared with the already reserved contents, when reservation is inputted, when execution of each reservation is possible for it, it is the composition of receiving the inputted reservation, but] usually both the conventional timer by the side of STB, and the timer by the side of recording equipment — although — [the digital broadcast record system of composition of that registration of recording reservation of a digital program can be performed] Since the timer by the side of STB and the timer by the side of recording equipment are what receives reservation independently, respectively, The recording time of the program recording separately reserved in each timer overlaps, and [cannot record as reservation or] There is a problem that it is difficult to avoid effectively, about that the channels of the digital program by which recording reservation was made by the timer by the side of the digital program by which display reservation was made by the timer by the side of STB, and recording equipment differ, and broadcasting hours overlap, and recording or a display cannot be performed as reservation.

[0012] Before it was not made in order that this invention might cancel the above-mentioned problem, and a user knows, the signal outputted to recording equipment changes from STB. It aims at offering the digital broadcast record system which can avoid un-arranging [that a different program from the program which asks for recording will be recorded].

[0013] moreover, this invention — both the timer by the side of STB, and the timer by the side of recording equipment — although — [it is the digital broadcast record system of composition of that registration of recording reservation of a digital program can be performed, and] The recording time of the program recording separately reserved in each timer overlaps, and [cannot record as reservation or] The channels of the digital program by which recording reservation was made by the timer by the side of the digital program by which display reservation was made by the timer by the side of STB, and recording equipment differ, and broadcasting hours overlap. It aims at offering the digital broadcast record system which can avoid effectively that recording or display cannot be performed as reservation.

[0014] Moreover, this invention aims at offering the digital broadcast record system by which a user can realize the digital broadcast record system which can avoid duplication reservation of program recording effectively.

[0015] Moreover, this invention against a user's will [a program is no longer displayed suddenly while on display, or] It aims at offering the digital broadcast record system which can avoid un-arranging [that the program of the intention of recording is no longer recorded, and timer reservation becomes impracticable against a user's will].

[0016] moreover, this invention — both the timer by the side of STB, and the timer by the side of recording equipment — although — [it is the digital broadcast record system of composition

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if, that registration of recording reservation of a digital program can be performed, and] It aims at offering the digital broadcast record system which can record the recording purpose program certainly based on the control signal for the reservation execution which the timer by the side of recording equipment outputs.

0017] Moreover, this invention aims at offering the digital broadcast record system which can perform automatic more desirable program recording or a program display, when there is extension of the broadcasting hours of the digital program under record and the broadcasting hours of a program and duplication by which timer reservation was made arise.

0018]

Means for solving problem] [the digital broadcast record system concerning this invention Claim 1)] in order to solve the above-mentioned technical problem Digital broadcast is received. The signal of one transponder is chosen from the received digital broadcast signal. The signal of one channel is chosen from the signal of the one above-mentioned transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs. In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of this receiving terminal equipment When the control signal which should change the channel chosen by the above-mentioned transport decoder to another channel from the channel chosen now is received It has a detection means to detect whether the above-mentioned recording equipment is recording the signal of the channel chosen now, and an alarm display means to display this when this detection means detects what the above-mentioned recording equipment is recording.

0019] [moreover, the digital broadcast record system concerning this invention (Claim 2)] Digital broadcast is received. The signal of one transponder is chosen from the received digital broadcast signal. The signal of two or more channels is chosen from the signal of the one above-mentioned transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder outputted from a port different, respectively and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs. In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of this receiving terminal equipment When the control signal which should change the transponder chosen by the above-mentioned tuner to another transponder from the transponder chosen now is received A detection means to detect whether the above-mentioned recording equipment is recording the signal of one channel of the transponders chosen now. When this detection means detects what the above-mentioned recording equipment is recording, it has an alarm display means to display this.

0020] [moreover, the digital broadcast record system concerning this invention (Claim 3)] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal

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f the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. The reservation information on the 1st timer of the above and the 2nd timer by which one of timers was reserved at least in the timer of another side is also held.

0021] [moreover, the digital broadcast record system concerning this invention (Claim 4)] digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When the 1st timer of the above has the input of program recording reservation The reservation execution time of the program recording reservation concerned is compared with the reservation execution time of the program recording reservation already performed by the 2nd timer of the above, and it has a detection means to detect whether duplication of program recording time arises.

0022] [moreover, the digital broadcast record system concerning this invention (Claim 5)] digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When the 2nd timer of the above has the input of program recording reservation The reservation execution time of the program recording reservation already performed by the reservation execution time, the 1st timer of the above, or the 2nd timer of the program recording reservation concerned and program display reservation is compared, and it has a detection means to detect whether duplication of reservation execution time arises.

0023] [moreover, the digital broadcast record system concerning this invention (Claim 6)] digital broadcast is received. The signal of a predetermined transponder is chosen from the
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received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs. In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of the above-mentioned receiving terminal equipment A detection means to detect whether it is in a state with the above-mentioned receiving terminal equipment able to output the signal of the recording purpose program just before the recording start of the program according reserved by the timer which performs program recording reservation of digital broadcast, and the above-mentioned timer. This detection means is equipped with an alarm display means to display this when it detects that it is in a state with the above-mentioned receiving terminal equipment unable to output the signal of the recording purpose program.

0024] [moreover, the digital broadcast record system concerning this invention (Claim 7)] The signal of a predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When program recording reservation of digital broadcast is performed to the 2nd timer of the above The check of whether there is no broadcast time of the recording purpose program just before the recording start by the program recording reservation concerned, and there is any change in a broadcast channel is performed to the above-mentioned receiving terminal equipment, and when there is change, it has a means to change the information on the program recording reservation concerned of the 2nd timer of the above.

0025] [moreover, the digital broadcast record system concerning this invention (Claim 8)] The signal of a predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output

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and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. An EPG information storage means for it to be prepared in the above-mentioned recording equipment, to acquire EPG information from the above-mentioned receiving terminal equipment, and to memorize this. This EPG information storage means is searched, and when it detects that there was change to the broadcast time or the broadcast channel of the digital program by which program recording reservation is performed to the 2nd timer of the above, it is a means to change the information on the program recording reservation concerned of the 2nd timer of the above.

0026] [moreover, the digital broadcast record system concerning this invention (Claim 9)] The signal of a predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When the broadcasting hours of the digital program which the above-mentioned receiving terminal equipment under present recording outputs in said recording equipment extend, when the time to the end of a program of the program concerned detects and overlaps [whether the broadcasting hours of the program by which program recording reservation or program display reservation is made are overlapped, and] the 1st or 2nd timer of the above, it has a control means to perform the recording or a display of a program according to a predetermined priority. 0027]

Mode for carrying out the invention]

Form 1. drawing 1 of operation is the figure showing the composition of the digital broadcast record system by the form 1 of operation of this invention, and is set to a figure. The antenna 11 which receives digital broadcast, and 12 are the 1st tuner which chooses and outputs one of the output signals of two or more transponders of the digital broadcast which the antenna 11 received. The transport decoder which 13 chooses one of two or more channels contained in the output signal of one transponder which a tuner 12 outputs, and is outputted, 14 is an AV decoder which reproduces and outputs the digital signal of the specific channel which the transport decoder 13 outputs to the image of an analog, and an audio signal. Moreover, 15 is the image of the digital signal which the transport decoder 13 outputs, or the analog which the AV decoder 14 outputs, and an output means to output an audio signal outside. 16 is a user input part into which user inputs control signals, such as a channel change. 17 is a system controller which receives the control signal from the user input part 16, and controls operation of the 1st tuner 12, the transport decoder 13, the AV decoder 14, and the output means 15.

0028] Set Top Box (STB) 10 is constituted by the 1st tuner 12, transport decoder 13, AV

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decoder 14, output means 15, and system controller. 20 is the image which the AV decoder 14 outputs, and a monitor which displays an image and a sound in response to an audio signal. The antenna with which 31 receives analog broadcasting, and 32 are the 2nd tuner which chooses and outputs one of two or more channels of the analog broadcasting which the antenna 31 received. 33 is the Records Department which records the image of the digital signal which the transport decoder 13 outputted from the signal which the 2nd tuner 32 outputs, or the output means 15 of STB10 outputs, or the analog which the AV decoder 14 outputs, and an audio signal. 34 is a user input part into which a user inputs control signals, such as a recording start and a recording stop. 35 receives the control signal from the user input part 34, and is the 2nd tuner 32 and a system controller which controls operation of the Records Department 33.

[0029] Next, operation is explained. A tuner 12 chooses and outputs one of the output signals of two or more transponders which the antenna 11 received. The program of 4-6 channels is usually included in the output signal of the transponder, and the transport decoder 13 chooses and extracts one of two or more channels contained in the output signal of the transponder received from the tuner 12, and outputs this to the AV decoder 14. The AV decoder 14 reproduces the signal from the transport decoder 13 to an image and a sound, and outputs it to monitor 20 grade. When recording the program of digital broadcast, the signal which the transport decoder 13 outputs, or the signal outputted from the AV decoder 14 is outputted to recording equipment 30 by the output means 15, and recording equipment 30 records the received signal on the Records Department 33. The Records Department 33 performs digital record, when recording the signal which the transport decoder 13 outputs, and when recording the signal outputted from the AV decoder 14, it performs analog record.

[0030] A channel with the transport decoder 13 is chosen and outputted here. While recording equipment 30 is recording the digital program outputted from the output means 15 of STB If this user input is performed when the control input of display channel selection is inputted from the user input part 16 and this inputted selection channel differs from the channel which the transport decoder 13 is choosing and outputting now The channel which the transport decoder 13 chooses and outputs changes, and in order for the program outputted from the output means 15 to also change, it will become impossible for recording equipment 30 to be able to continue recording the program recorded now.

[0031] [the digital broadcast record system by the form 1 of this operation] If the system controller 17 by the side of STB receives the control input of the display channel selection from the user input part 16 It is judged whether it is necessary to change the channel which the transport decoder 13 is choosing and outputting now. It is the channel as the channel which the transport decoder 13 is choosing and outputting now with same channel chosen by the user input. When the transport decoder 13 does not need to change the channel chosen and outputted now, the control input is received, and the monitor display of the selected channel is carried out. On the other hand, the channels chosen by the user input are the channel which the transport decoder 13 is choosing and outputting now, and a different channel. When the transport decoder 13 needs to change the channel chosen and outputted now While recording equipment 30 detects whether the signal currently outputted from the present output means 15 is under recording and is recorded, the system controller 17 takes out an indication signal so that warning may be displayed to the alarm display means 40. The alarm display means 40 receives this indication signal. "a digital program is under recording now. If display channel selection is performed, it becomes impossible to record the program under present recording. The message of warning, such as ", is displayed with a monitor display top, a sound, etc. The user can recognize that the digital program of the channel which differs from the channel which recording equipment 30 chose by a user input by this warning is under recording. It can be chosen whether whether selection of display channel being stopped and a current line carry out the monitor display of the channel which canceled and chose the recording of the digital program which is. That is, before a user

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nows, the signal outputted to recording equipment 30 changes, and it can avoid un-arranging that the program of a different channel from the channel which asks for recording will be recorded].

0032] thus, [the digital broadcast record system by the form 1 of this operation] Digital broadcast is received. The signal of one transponder is chosen from the received digital broadcast signal. The signal of one channel is chosen from the signal of the one above-mentioned transponder which the tuner 12 to output and this tuner 12 output. The signal of the channel which the transport decoder 13 to output and this transport decoder 13 output is decoded. STB10 which has an output means 15 to output the analog signal which the digital signal or the above-mentioned AV decoder 14 which the AV decoder 14 changed into an analog signal and the above-mentioned transport decoder 13 output outputs. In the digital broadcast record system which consists of recording equipment 30 which has the Records Department 33 which records his output signal of STB10 When the control signal which should change the channel chosen by the above-mentioned transport decoder 13 to another channel from the channel chosen now is received A detection means to detect whether the above-mentioned recording equipment 30 is recording the signal of the channel chosen now (system controller 17). Since it had composition equipped with an alarm display means 40 to display this when this detection means detected that the above-mentioned recording equipment is recording Before a user knows, the signal outputted to recording equipment 30 changes, and it can avoid un-arranging [that the program of a different channel from the channel which asks for recording will be recorded].

0033] In addition, although the form 1 of the above-mentioned implementation showed the thing of composition of that the transport decoder 13 of STB chooses and outputs the signal of one channel from the signal of the one above-mentioned transponder which a tuner 12 outputs If the transport decoder 13b is the thing of composition of outputting from a port which chooses the signal of two or more channels from the signal of one transponder, and is different, respectively is shown in drawing 2 Since two different channels can be simultaneously outputted if the transponder is the same even if channels differ, even if it chooses the channel under record, and a different channel as a display channel, a selection channel can be displayed without interfering with recording. When [however,] the channel of the channel under recording chosen as a display channel is a channel from which a transponder differs even in this case Since a transponder will be changed in a tuner, the transport decoder 13b cannot output the channel under record after channel selection now. When [therefore,] the transport decoder of STB is the thing of composition of outputting from a port which chooses the signal of two or more channels from the signal of one transponder, and is different, respectively When the control signal which should change the transponder chosen by the tuner to another transponder from the transponder chosen now is received The system controller of STB detects whether the above-mentioned recording equipment is recording the signal of one channel of the transponders chosen now. When it detects that it is under record, the composition, then the good and same effect as a form of the above-mentioned implementation which display this by an alarm display means are done o.

0034] Form 2. drawing 3 of operation is the figure showing the composition of the digital broadcast record system by the form 2 of operation of this invention, and the same mark as drawing 1 is the same or a considerable portion in a figure. Moreover, 18 receives the program recording reservation and program display reservation which are inputted from the user input part 6, and holds this. The 1st timer which will output the control signal for reservation execution to the system controller 17 if reservation time comes, 36 is the 2nd timer which outputs the control signal for reservation execution to the system controller 35, when the program recording reservation inputted from the user input part 34 is received, this is held and reservation time comes.

0035] With the form 2 of this operation here [the 1st timer 18 by the side of STB10, and the

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2nd timer 36 by the side of recording equipment 30] any — although — [registration of recording reservation of a digital program can be performed, and / a control signal / exchange and] between the system controller 17 of STB10, and the system controller 35 of recording equipment 30 It has the composition that the timed recording of a digital program can be made, by interlocking both system controllers and making program recording reservation with either the 1st timer 18 by the side of STB10, and the 2nd timer 36 by the side of recording equipment 30. 0036] Moreover, drawing 4 is the figure showing the program reservation information held at the 1st timer 18 of the digital broadcast record system by the form 2 of this operation, and the 2nd timer 36, and is set to a figure. Reservation S1 - reservation S3 It is the program recording reservation (digital program recording reservation) which the 1st timer 18 received. Reservation D1 and reservation D2 It is the program display reservation (digital program display reservation) which the 1st timer 18 received, and they are reservation R1 and reservation R2. It is the program recording reservation (digital program recording reservation or analog broadcasting program recording reservation) which the 2nd timer 36 received. [the 1st timer 18] only not only the information on the program reservation which the 1st timer 18 self received as shown in a figure The information on the program reservation which the 2nd timer 36 received is also held, and another side and the 2nd timer 36 hold only the information on the program reservation which the 2nd timer 36 self received.

0037] Next, operation is explained. In the digital broadcast record system of the form 2 of this operation when program recording reservation is made at the 1st timer 18 by the side of STB10 the system controller 17 by the side of STB10] According to the control signal for the reservation execution which the 1st timer 18 outputs, control the 1st tuner 12 and the transport decoder 13, and the channel of the recording purpose program is chosen. While outputting the signal which the transport decoder 13 outputs, or the signal outputted from the AV decoder 14 to recording equipment 30 by the output means 15, a control signal is outputted to the system controller 35 by the side of recording equipment 30, and — the system controller 35 by the side of recording equipment 30 operates the Records Department 33 according to the control signal from the system controller 17 by the side of STB10 — the signal from the output means 15 of STB — digital one — or analog record is carried out. When [moreover,] digital program recording reservation is made at the 2nd timer 36 by the side of recording equipment 30 The system controller 35 by the side of recording equipment 30 embraces the control signal for the reservation execution which the 2nd timer 36 outputs, the Records Department 33 — the signal from the output means 15 of STB — digital one — or while making it operate so that analog record may be carried out A control signal is outputted to the system controller 17 by the side of STB10. The system controller 17 by the side of STB10 controls the 1st tuner 12 and the transport decoder 13 according to the control signal from the system controller 35 by the side of recording equipment 30, and chooses the channel of the recording purpose program. The signal which the transport decoder 13 outputs, or the signal outputted from the AV decoder 14 is outputted to recording equipment 30 by the output means 15. Usually, [a timer does not have duplication as compared with the contents already reserved by the timer, when reservation is inputted, when execution of each reservation is possible for it, it has the composition of receiving the inputted reservation, but] When two or more timers receive reservation independently, respectively The recording time of the program recording separately reserved in each timer overlaps, and [cannot record as reservation or] It is difficult to avoid effectively that the channels of the digital program by which recording reservation was made by the timer by the side of the digital program by which display reservation was made by the timer by the side of STB, and recording equipment differ, and broadcasting hours overlap, and recording or a display cannot be performed as reservation.

0038] In the digital broadcast record system by the form 2 of this operation, as shown in drawing , the 1st timer 18 has the composition of holding not only the reservation information that this

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st timer received but the reservation information which the 2nd timer 36 received. When program reservation is inputted into the 1st timer 18 from the user input part 16, [the 1st timer 18] Only when it judges whether duplication arises as compared with the reservation information which self holds the inputted program reservation and which this 1st timer 18 received, and all the reservation information that the 2nd timer 36 received and duplication does not arise, the inputted program reservation is received. [when duplication of reservation produces the case of program recording reservation here when the recording time of program recording overlaps, the channels of the digital program by which recording reservation was made between program recording reservation and program display reservation with the digital program by which display reservation was made differ and broadcasting hours overlap, produce, but] The 1st timer 18 checks that this duplication does not arise, and receives program reservation.

0039] When program recording reservation is inputted into the 2nd timer 36 from the user input part 34, on the other hand, [the 2nd timer 36] Retrieve the program reservation information currently held at the 1st timer 18, and the inputted program reservation is compared with the reservation information which the 1st timer 18 received, and all the reservation information that the 2nd timer 36 received. Only when it judges whether duplication arises and duplication does not arise, the inputted program reservation is received. As mentioned above, since reservation is received only when duplication produces any timer with the form 2 of this operation as compared with no program reservation information which both timers received The recording time of the program recording separately reserved in each timer overlaps, and [cannot record as reservation or] It is effectively avoidable that the channels of the digital program by which recording reservation was made by the timer by the side of the digital program by which display reservation was made by the timer by the side of STB, and recording equipment differ, and broadcasting hours overlap, and recording or a display cannot be performed as reservation.

0040] Moreover, it sends out the contents of the received program recording reservation to the 1st timer 18 of STB10 while holding the received program recording reservation information itself, when the 2nd timer 36 is received [program reservation]. The 1st timer 18 holds this for the information received from the 2nd timer 36 as one of the program reservation information. By operating as mentioned above, all of the program reservation information which the 1st timer 18 always received, and the program reservation information which the 2nd timer 36 received will be held at the 1st timer 18.

0041] thus, [the digital broadcast record system by the form 2 of this operation] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner 12 to output and this 1st tuner 12 output. The signal of the channel which the transport decoder 13 to output and this transport decoder 13 output is decoded. An output means 15 to output the analog signal which the digital signal or the above-mentioned AV decoder which the AV decoder 14 changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, or program display reservation. Or STB10 which has the 1st timer 18 which performs program recording reservation of analog broadcasting, Analog broadcasting is received. A predetermined channel is chosen from the received analog broadcasting signal. [the 2nd timer 36 which performs the Records Department 33 which records the output signal of the 2nd tuner 32 to output and this 2nd tuner 32, or the output signal of the above STB10 and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast] In the digital broadcast record system which consists of recording equipment which it has Since the 1st timer 18 of the above had composition also holding the reservation information reserved in the 2nd timer 36 of the above The recording time of the program recording separately reserved in each timer overlaps, and [cannot record as reservation or] It is effectively avoidable that the channels of the digital program by which recording reservation was made by the timer by the side

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f the digital program by which display reservation was made by the timer by the side of STB, and recording equipment differ, and broadcasting hours overlap, and recording or a display cannot be performed as reservation.

0042] In addition, although the 1st timer 18 by the side of STB had composition also holding the reservation information reserved in the 2nd timer 36 by the side of recording equipment with the arm 2 of the above-mentioned implementation As shown in drawing 5, conversely, the 2nd timer 6 by the side of recording equipment is good also as composition also holding the reservation information reserved in the 1st timer 18 by the side of STB, and does so the same effect as the arm 2 of the above-mentioned implementation. In the digital broadcast record system considered as such composition When program reservation is inputted into the 2nd timer 36 from the user input part 34, [the 2nd timer 36] Only when it judges whether duplication arises as compared with the reservation information to which self holds the inputted program reservation and which this 2nd timer 36 received, and all the reservation information that the 1st timer 18 received and duplication does not arise, the inputted program reservation is received. When program recording reservation is inputted into the 1st timer 18 from the user input part 16, on the other hand, [the 1st timer 18] Retrieve the program reservation information currently held at the 2nd timer 36, and the inputted program reservation is compared with the reservation information which the 2nd timer 36 received, and all the reservation information that the 1st timer 18 received. Only when it judges whether duplication arises and duplication does not arise, the inputted program reservation is received.

0043] Thus, since reservation is received only when duplication produces any timer as compared with no program reservation information which both timers received The recording time of the program recording separately reserved in each timer overlaps, and [cannot record as reservation] It is effectively avoidable that the channels of the digital program by which recording reservation was made by the timer by the side of the digital program by which display reservation was made by the timer by the side of STB, and recording equipment differ, and broadcasting hours overlap, and recording or a display cannot be performed as reservation. Moreover, it sends out the contents of the received program recording reservation to the 2nd timer 36 of recording equipment 30 while holding the received program recording reservation information itself, when the 1st timer 18 is received [program reservation]. The 2nd timer 36 holds this for the information received from the 1st timer 18 as one of the program reservation information. By operating as mentioned above, all of the program reservation information which the 2nd timer 36 always received, and the program reservation information which the 1st timer 18 received will be held at the 2nd timer 36.

0044] Moreover, as shown in drawing 6, it is good also as composition also holding the reservation information by which the timer of both the 1st timer and the 2nd timer was reserved by the timer of another side. In the digital broadcast record system considered as such composition When program reservation is inputted into the 1st timer 18 from the user input part 6, [the 1st timer 18] Only when it judges whether duplication arises as compared with the reservation information to which self holds the inputted program reservation and which this 1st timer 18 received, and all the reservation information that the 2nd timer 36 received and duplication does not arise, the inputted program reservation is received. When program reservation is inputted into the 2nd timer 36 from the user input part 34, on the other hand, [the 2nd timer 36] Only when it judges whether duplication arises as compared with the reservation information to which self holds the inputted program reservation and which this 2nd timer 36 received, and all the reservation information that the 1st timer 18 received and duplication does not arise, the inputted program reservation is received.

0045] Thus, since reservation is received only when duplication produces any timer as compared with no program reservation information which both timers received The recording time of the program recording separately reserved in each timer overlaps, and [cannot record as reservation
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It is effectively avoidable that the channels of the digital program by which recording reservation was made by the timer by the side of the digital program by which display reservation was made by the timer by the side of STB, and recording equipment differ, and broadcasting hours overlap, and recording or a display cannot be performed as reservation. Moreover, it sends out the contents of the received program recording reservation to the 2nd timer 36 of recording equipment 30 while holding the received program recording reservation information itself, when the 1st timer 18 is received [program reservation]. The 2nd timer 36 holds this for the information received from the 1st timer 18 as one of the program reservation information. On the other hand, it sends out the contents of the received program recording reservation to the 1st timer 18 of STB10 while holding the received program recording reservation information itself, when the 2nd timer 36 is received [program reservation]. The 1st timer 18 holds this for the information received from the 2nd timer 36 as one of the program reservation information. All of the program reservation information which the 1st timer 18 always received to the 1st timer 18 by operating as mentioned above, and the program reservation information which the 2nd timer 36 received are held. Moreover, all of the program reservation information which the 2nd timer 36 always received, and the program reservation information which the 1st timer 18 received will be held at the 2nd timer 36.

0046] Moreover, although explained in the form 2 of the above-mentioned implementation as what exchanges the program reservation information between the 1st timer 18 and the 2nd timer 36 directly between the 1st timer 18 and the 2nd timer 36 It cannot be overemphasized that it is good also as composition which performs the exchange of program reservation information through the system controllers 17 and 35.

0047] Form 3. of operation, next the digital broadcast record system by the form 3 of operation of this invention are explained.

0048] Although the composition of the digital broadcast record system by the form 3 of this operation is fundamentally [as the composition of the digital broadcast record system by the form 2 of operation shown in drawing 3] the same, the 1st timer 18 and the 2nd timer hold only the reservation information which self received, respectively. Moreover, the 1st timer 18 compares the reservation execution time of the program recording reservation concerned with the reservation execution time of the program recording reservation already performed by the 2nd timer of the above, when there is an input of program recording reservation. When it detects whether duplication of program recording time arises and duplication arises, the duplicating contents are displayed by the display means which is not illustrated. Display means may be display means, such as a liquid crystal prepared separately [a monitor besides a means to display a character etc. on a monitor 20].

0049] Next, operation is explained. Drawing 7 is a figure for explaining operation of the digital broadcast record system by the form 3 of this operation. The digital program display reservation by which P1 was already received in the figure at the 1st timer 18, The digital program recording reservation by which P2 was already received at the 1st timer 18, The analog broadcasting program recording reservation already received by the 1st timer 18 P3, the analog broadcasting program recording reservation already received by the 2nd timer 36 P4, and P5 are the digital program recording reservation already received by the 2nd timer 36.

0050] In the digital broadcast record system by the form 3 of this operation, if reservation of the recording of a program is newly inputted into the 1st timer 18 by the side of STB, it will be detected whether the 1st timer 18 retrieves the program reservation information currently held at the 2nd timer 36, and duplication of program recording time produces it [here / the recording reservation held at the 2nd timer 36] Since the Records Department 33 will be in a record state by the reservation execution and it will be in the state where other programs are unrecordable, even if this is recording reservation of a digital program, and it is recording reservation of an analog broadcasting program [the 1st timer 18 / the recording reservation held at the 2nd timer

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[6] irrespective of whether it is digital program recording reservation or it is analog broadcasting program recording reservation It checks whether the reservation execution time and the reservation execution time of new recording reservation have duplication, or there is nothing, and when there is duplication, the contents of the duplication are displayed on a display means.

0051] The case where it is newly going to reserve the recording of a program in the time zone of P4 shown in drawing 7 "the inputted program recording overlaps the recording time of the already reserved analog broadcasting program (program name). Please choose whether reservation which] is validated. Messages, such as "", are displayed. When it is going to reserve the recording of the same analog broadcasting program as the analog broadcasting program by which recording reservation is newly made by P4 in the time zone of P4 shown in drawing 7, a message "recording reservation of the inputted program recording is already made" is displayed. Moreover — the case where it is newly going to reserve the recording of a program in the time zone of P5 shown in drawing 7 — "the inputted program recording overlaps the recording time of the already reserved digital program (program name). Please choose whether reservation which] is validated. Messages, such as "", are displayed. When it is going to reserve the recording of the same digital program as the digital program by which recording reservation is newly made by P5 in the time zone of P5 shown in drawing 7, a message "recording reservation of the inputted program recording is already made" is displayed. By these messages, the user can check the situation of reservation and can avoid duplication reservation effectively.

0052] thus, [the digital broadcast record system by the form 3 of this operation] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned AV decoder which AV decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] STB which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above When [or] the 1st timer of the above has the input of program recording reservation in the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of above STB and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast The reservation execution time of the program recording reservation concerned is compared with the reservation execution time of the program recording reservation already performed by the 2nd timer of the above. Since it had composition equipped with a detection means to detect whether duplication of program recording time arises, a user can realize the digital broadcast record system which can avoid duplication reservation of program recording effectively.

0053] When [in addition,] the 1st timer by the side of STB has the input of program recording reservation with the form 3 of the above-mentioned implementation Although it considered as the composition to detect whether the 1st timer would compare the reservation execution time of the program recording reservation concerned with the reservation execution time of the program recording reservation already performed by the 2nd timer of the above, and duplication of program recording time would arise When the 2nd timer has the input of program recording reservation, the reservation execution time of the program recording reservation already performed by the reservation execution time, the 1st timer of the above, or the 2nd timer of the program recording reservation concerned and program recording display reservation is compared. It is good

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Also as composition which detects whether duplication of reservation execution time arises.

2054] In the digital broadcast record system considered as such composition, if reservation of new recording of a program is newly inputted into the 2nd timer 36 by the side of recording equipment, it will be detected whether the 2nd timer 36 retrieves the program reservation information currently held at the 1st timer 18, and duplication of program recording time produces [here / the recording reservation held at the 1st timer 18] Even if this is recording reservation of a digital program and it is recording reservation of an analog broadcasting program, it is what the Records Department 33 will be in a record state by the reservation execution, and will be in the state where other programs are unrecordable. Moreover, if the channels of the display purpose program of this display reservation and the recording purpose program of new recording reservation differ or transponders differ, when there is digital program display reservation Since the program signal for recording of STB cannot be outputted and record reservation cannot be fulfilled, [the 2nd timer 36] [the recording reservation held at the 1st timer 18] irrespective of whether it is digital program recording reservation or it is analog broadcasting program recording reservation It is checked whether the reservation execution time and the reservation execution time of new recording reservation have duplication, or there is nothing. Moreover, it checks whether the channels of the display purpose program of the display reservation held at the 1st timer 18 and the recording purpose program of new recording reservation etc. differ, and reservation execution time has duplication, or there is nothing, and when there is duplication, the contents of the duplication are displayed on a display means. for example, when it is going to reserve the recording of the digital program from which the digital program by which display reservation is newly made by P1, a channel, etc. differ in the time zone of P1 shown in drawing 7 R> 7 "The inputted program recording overlaps the display time of the already reserved digital program (program name). Please choose whether reservation [which] is validated. The case where it is newly going to reserve the recording of a program in the time zone of P2 which displays messages, such as ", and is shown in drawing 7 "the inputted program recording overlaps the recording time of the already reserved digital program (program name). Please choose whether reservation [which] is validated. Messages, such as ", are displayed. When it is going to reserve the recording of the same digital program as the digital program by which recording reservation is newly made by P2 in the time zone of P2 shown in drawing 7, a message — "recording reservation of the inputted program recording is already made" — is displayed. moreover — the case where it is newly going to reserve the recording of a program in the time zone of P3 shown in drawing 7 — " — the inputted program recording overlaps the recording time of the already reserved analog broadcasting program (program name). Please choose whether reservation [which] is validated. Messages, such as ", are displayed. When it is going to reserve the recording of the same digital program as the analog broadcasting program by which recording reservation is newly made by P3 in the time zone of P3 shown in drawing 7, a message — "recording reservation of the inputted program recording is already made" — is displayed. By these messages, the user can check the situation of reservation and can avoid duplication reservation effectively.

2055] Form 4. drawing 8 of operation is the figure showing the composition of the digital broadcast record system by the form 4 of operation of this invention, and the same mark as drawing 1 is the same or a considerable portion in a figure. Moreover, 18b is a timer which outputs the control signal for reservation execution to the system controller 17, when the program recording reservation and program display reservation which are inputted from the user input part 16 are received, this is held and reservation time comes.

2056] Next, operation is explained. When displaying or recording the digital program which STB outputs by timer reservation, a user performs display reservation of the program for which it asks from the user input part 16 to Timer 18b, or recording reservation. Timer 18b holds this reservation information, and if the start time of a reservation program comes, it will output the

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ontrol signal for reservation execution. The system controller 17 of STB embraces the control signal for the reservation execution which Timer 18b outputs. Control the 1st tuner 12 and the transport decoder 13, choose the channel of the recording purpose program, output the signal of program to a monitor 20 through the AV decoder 14, and perform a program display, or or for the recording of a program The signal which the transport decoder 13 outputs, or the signal outputted from the AV decoder 14 is outputted to recording equipment 30 by the output means 5.

0057] The program of a channel with the transport decoder 13 is chosen and outputted here. This program signal is outputted to a monitor 20 through the AV decoder 14. If display about the program in which a channel differs from the program which is an output program of STB and is displayed now, or reservation of recording is fulfilled while the program display is performed When the channel which the transport decoder 13 chooses and outputs changes, and the program currently displayed changes or the program of a conversely different channel displays, unarranging [that timer reservation becomes impracticable] arises. Moreover, a channel with the transport decoder 13 is chosen and outputted. While recording equipment 30 is recording the digital program outputted from the output means 15 of STB If display about the program in which channel differs from the program which is an output program of STB and is recorded now, or reservation of recording is fulfilled In order for the program which the channel which the transport decoder 13 chooses and outputs changes, and is outputted from the output means 15 to also change. When recording equipment 30 is during the recording of the program of a channel which it becomes impossible to be able to continue recording the program recorded now, and is conversely different, unarranging [that timer reservation becomes impracticable] arises.

0058] [the digital broadcast record system by the form 4 of this operation] As the system controller 17 of STB is shown in the flow chart of drawing 10 When it detects that retrieve the reservation information on Timer 18b periodically (Step S1), and reservation of the output program of STB is made with Timer 18b. It is detected whether they are (Step S2) and the state where STB can output the signal of the reservation purpose program just before execution of the reservation concerned (Step S3). When STB detects that the reservation purpose program is in the state which is outputting the signal of a digital program which is [channel] different in the state, i.e., now, where STB cannot output the signal of the reservation purpose program, an indication signal is taken out so that warning may be displayed to the alarm display means 40. The alarm display means 40 receives this indication signal. "although display (or recording) reservation of a digital program is due to be fulfilled soon ** [execution of reservation / become / impossible / it / for a program (or under recording) present on display to display] (or recording) The message of warning, such as ~, is displayed with a monitor display top, a sound, etc. (Step S4). It can be chosen whether by this warning, the user can recognize that reservation of the digital program held at Timer 18b is fulfilled soon, cancels reservation of an execution schedule, and the program under the present display or recording is continued, and he displays or records, or reservation is kept performed. That is, it is avoidable unarranging [that the program of the intention of a program no longer being suddenly displayed while on display, or recording is no longer recorded, and timer reservation becomes impracticable against a user's will against a user's will].

0059] thus, [the digital broadcast record system by the form 4 of this operation] Digital broadcast is received. The signal of one transponder is chosen from the received digital broadcast signal. The signal of one channel is chosen from the signal of the one above-mentioned transponder which the tuner 12 to output and this tuner 12 output. The signal of the channel which the transport decoder 13 to output and this transport decoder 13 output is decoded. STB10 which has an output means 15 to output the analog signal which the digital signal or the above-mentioned AV decoder 14 which the AV decoder 14 changed into an analog signal and the above-mentioned transport decoder 13 output outputs. In the digital broadcast record system

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which consists of recording equipment 30 which has the Records Department 33 which records his output signal of STB10. The timer 18b which reserves the digital program which the above STB10 outputs. A detection means to detect whether it is in a state with the above STB10 able to output the signal of the reservation purpose program just before execution of the reservation concerned when reservation of the output program of the above STB10 is made with the above-mentioned timer 18b (system controller 17). Since this detection means had composition equipped with an alarm display means 40 to display this when it detected that it is in a state with above STB unable to output the signal of the reservation purpose program. It is avoidable unarranging [that the program of the intention of a program no longer being suddenly displayed while on display, or recording is no longer recorded, and timer reservation becomes impracticable against a user's will against a user's will].

0060] [in addition, the timer 18b which reserves the digital program which STB10 outputs with the form 4 of the above-mentioned implementation] When it detects that it is prepared in the STB10 side, the system controller 17 by the side of STB retrieves the reservation information on timer 18b periodically, and reservation of the output program of STB is made with timer 18b. When it detects that it is in the state where it cannot be detected whether it is the state where STB can output the signal of the reservation purpose program, and STB cannot output the signal of the reservation purpose program just before execution of the reservation concerned [had composition which takes out an indication signal so that warning might be displayed to the alarm display means 40, but] [the timer 36b which reserves the digital program which STB10 outputs] is shown in drawing 9. When it detects that it is prepared in the recording equipment 30 side, the system controller 35 by the side of recording equipment retrieves the reservation information on timer 36b periodically, and reservation of the output program of STB is made with timer 36b. When it detects that it is in the state where it cannot be detected whether it is the state where STB can output the signal of the reservation purpose program, and STB cannot output the signal of the reservation purpose program just before execution of the reservation concerned. It is good also as composition which takes out an indication signal so that warning may be displayed to the alarm display means 40, and the same effect as the form 4 of the above-mentioned implementation is done so.

0061] Form 5. drawing 11 of operation is the figure showing the composition of the digital broadcast record system by the form 5 of operation of this invention, and the same mark as drawing 3 is the same or a considerable portion in a figure. Moreover, 19 is an EPG information storage part by which separation extraction was carried out by the transport decoder 13 and which memorizes EPG information.

0062] In digital television broadcasting, information (program-guide information) required in order to create a program guide to the main information on a program, including an image, a sound, etc., is multiplexed and broadcast. A program guide is created based on this program-guide information by the receiving set side, this is displayed on a screen, and EPG (Electronic Program Guide) to which a televiewer performs selection of a program and reservation on a screen is put in practical use. Although EPG information is this program-guide information, for example, there is Europe DVB (Digital Video Broadcasting) as one of the standards of a transmission signal in the digital broadcast using MPEG2. By this DVB standard, SI (Service Information) is transmitted as information (EPG information) which is a help at the time of a televiewer choosing and reserving a program. This is information sent out for every definite period of time to every service broadcasting station, and the information for identifying a program, the title of a program, the broadcast start time of a program, the broadcasting-hours length of a program, the channel it is broadcast that a program is, a genre code, etc. are contained.

0063] Next, operation of the digital broadcast record system by the form 5 of this operation is explained. In the digital broadcast record system of the form 5 of this operation, when making the recording of a digital program, recording of a digital program is reserved from the user input http://dossier1.ipdl.ncipi.go.jp/cgi-bin/tran_web.cgi_eje?u=http%3A%2F%2Fdossier%2Eip... 10-01-2006

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part 16 to the 1st timer 18 by the side of STB, or the 2nd timer 36 by the side of [the user input part 34 to] recording equipment. If the broadcast time of the recording purpose program comes, the control signal for reservation execution will be outputted, the system controller by the side of STB and recording equipment will control operation of each part according to this control signal. And, as for the timer which received reservation, the recording purpose program will be recorded. When the broadcast start time of the recording purpose program is changed here by having extended the broadcasting hours of the program in front of the recording purpose program etc. After the timer received reservation, If recording operation was performed based on reservation information when a timer receives reservation, the recording purpose program cannot be recorded certainly. [such change of the broadcasting hours of a program or change of a broadcast channel] In STB equipped with the timer which is STB corresponding to an EPG system and performs program display reservation and program record reservation since it is sent out at any time from the informer of a program as EPG information EPG information is checked in advance of execution of reservation, and if the program reservation information which a timer holds is changed when there is change to program broadcasting hours or a program broadcast channel, the program reserved to the timer of STB will be displayed and recorded certainly. 0064] On the other hand, it is the digital broadcast record system which consists of STB and recording equipment. In what recording equipment equips with the timer of recording reservation of a digital program which can be set up independently with the timer by the side of STB If the program reservation information which the timer by the side of recording equipment holds is not changed, the case where the recording purpose program is not certainly recorded even if program recording reservation received by the timer by the side of recording equipment is fulfilled arises. the digital broadcast record system by the form 5 of this operation] As the system controller of recording equipment is shown in the flow chart of drawing 13 R> 3 When it detects that retrieve the reservation information on the 2nd timer 36 periodically (Step S1), and recording reservation of the output program of STB is made with the 2nd timer 36, (Step S2) and the EPG information storage part 19 of STB are searched just before execution of the reservation concerned. When it is detected that check whether a reservation program is broadcast as planned (Step S3), for example, the broadcast time of a reservation program is changed, it writes at the broadcast time after changing the broadcast time of the program reservation information on the 2nd timer 36 (Step S4). Also when the broadcast time of the recording purpose program concerned etc. is changed after making by this recording reservation of the digital program which STB outputs to the 2nd timer 36, based on the control signal for the reservation execution which the 2nd timer 36 outputs, the recording purpose program can be recorded certainly.

0065] thus, [the digital broadcast record system by the form 5 of this operation] The signal of predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner 12 which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner 12 output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder 13 to output and this transport decoder 13 output is decoded. An output means 15 to output the analog signal which the digital signal or the above-mentioned AV decoder 14 which the AV decoder 14 changed into an analog signal and the above-mentioned transport decoder 13 output outputs, and program recording reservation of digital broadcast Or STB10 which has the 1st timer which performs program display reservation or program recording reservation of analog broadcasting, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. [the 2nd timer 36 which performs the Records Department 33 which records the output signal of the 2nd tuner 32 to output and the 2nd tuner 32 of the above, or the output signal of the above STB10 and program

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recording reservation of analog broadcasting, or program recording reservation of digital broadcast] In the digital broadcast record system which consists of recording equipment which it is as when program recording reservation of digital broadcast is performed to the 2nd timer 36 of the above. The check of whether there is no broadcast time of the recording purpose program just before the recording start by the program recording reservation concerned, and there is any change in a broadcast channel is performed to Above STB. Since it had composition equipped with a means (system controller 35) to change the information on the program recording reservation concerned of the 2nd timer 36 of the above when there was change, based on the control signal for the reservation execution which the 2nd timer 36 outputs, the recording purpose program can be recorded certainly.

0066] In addition, although the system controller 35 of recording equipment was considered as the composition which searches the EPG information storage part 19 prepared in STB, and checks the existence of change, such as broadcast time of a program, with the form 5 of the above-mentioned implementation. The EPG information storage part 37 which receives the EPG information in which the transport decoder 13 of STB carries out separation extraction, and which it outputs to the recording equipment side from the output signal of a transponder like the modification shown in drawing 12, and memorizes this is formed. The system controller 35 of recording equipment is good also as composition which searches this EPG information storage part 37, and checks the existence of change, such as broadcast time of a program. In such a modification, [the system controller 35 of recording equipment] When it detects that retrieve the reservation information on the 2nd timer 36 periodically (Step S1), and recording reservation of the output program of STB is made with the 2nd timer 36 as shown in the flow chart of drawing 13, Acquire EPG information in (Step S2) and the EPG information storage part 37 from the transport decoder 13 of STB, and they are made to memorize this just before execution of the reservation concerned (Step S3). When it is detected that search this EPG information storage part 37, and check whether a reservation program is broadcast as planned (Step S4), for example, the broadcast time of a reservation program is changed, it rewrites at the broadcast time after changing the broadcast time of the program reservation information on the 2nd timer 36 (Step S4). Like the digital broadcast record system of the form 5 of the above-mentioned implementation by this. Also when the broadcast time of the recording purpose program concerned etc. is changed after making recording reservation of the digital program which STB outputs to the 2nd timer 36, based on the control signal for the reservation execution which the 2nd timer 36 outputs, the recording purpose program can be recorded certainly.

0067] In addition, although the EPG information storage part 37 should acquire EPG information from the transport decoder 13 of STB and shall have memorized this in the flow chart of drawing 4 just before execution of reservation. It cannot be overemphasized that the EPG information storage part 37 acquires EPG information from the transport decoder 13 of STB, and you may make it always memorize this irrespective of [that reservation of the output program of STB is made with the 2nd timer 36] whether to buy and there to be.

0068] Form 6. of operation, next the digital broadcast record system by the form 6 of operation of this invention are explained. [the digital broadcast record system by the form 6 of this operation] When the broadcasting hours of the digital program which STB under present recording outputs in recording equipment extend, it is detected whether the time to the end of a program of the program concerned overlaps the broadcasting hours of the program by which program recording reservation is made at the 2nd timer by the side of the program by which program recording reservation or program display reservation is made at the 1st timer by the side of STB, or recording equipment. [when overlapping, realize with the same composition as the digital broadcast record system of the form 5 of operation which performs the recording or a display of a program according to a predetermined priority, and is shown in drawing 11, or the digital broadcast record system of the modification of the form 5 of operation shown in drawing

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2, but] Operation of the system controller 35 of recording equipment differs. 0069] [the digital broadcast record system by the form 6 of this operation] As the system controller 35 of recording equipment is shown in the flow chart of drawing 15 When it detects that retrieve EPG information periodically, supervise whether the broadcasting hours of the program under present record are extended (Step S1), and the broadcasting hours of the program under present record are extended during recording of the digital program which STB outputs When it detects that investigate whether display reservation of a program or recording reservation is performed to the 1st timer by the side of STB, or the 2nd timer by the side of recording equipment (Step S2), and reservation of a program is made with one of timers It is investigated whether the broadcasting hours of the program by which the broadcasting hours after extension of the program under present record are reserved are overlapped (Step S3). When overlapping is detected, the priority is judged based on the standard beforehand set up in the program reserved as the program under present record (Step S4). When it judges that the priority of the program under present record is high, it continues the recording of the program under record now (Step S5). When it judges that the priority of the program reserved is high, the recording of the program under record is stopped now, and a reservation program is recorded based on timer reservation (Step S6). (or display) When there is extension of the broadcasting hours of the digital program under record and the broadcasting hours of a program and duplication by which timer reservation was made arise by this, automatic more desirable program recording or a program display can be performed. Although the fee collection information on a program of the priority of a program, i.e., the audience fee of a program, is cheap, a priority is made high here. The standard of making a priority low although the audience fee of a program is high, and a user's viewing-and-listening tendency, namely, the priority of the program of the genre which the user is often seeing usually is made high, and the standard of making low the priority of the program of the genre seldom seen etc. should just set up a suitable standard the purpose and if needed.

0070] thus, [the digital broadcast record system by the form 6 of this operation] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned AV decoder which AV decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] STB which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. In the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the 2nd tuner to output and the 2nd tuner of the above, or the output signal of Above STB and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast When the broadcasting hours of the digital program which the above STB under present recording outputs in said recording equipment extend, it is detected whether the time to the end of a program of the program concerned overlaps the broadcasting hours of the program by which program recording reservation or program display reservation is made at the 1st or 2nd timer of the above. Since it had composition equipped with control means (system controller 35) to perform the recording or a display of a program according to a predetermined priority when overlapping When there is extension of the broadcasting hours of the digital program under record and the broadcasting hours of a program and duplication by which timer reservation was made arise, automatic more desirable program recording or a program display can be performed.

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[071] In addition, with the form 6 of the above-mentioned implementation [the system controller 35 by the side of recording equipment] Although what performs detection of extension of the broadcasting hours of the digital program under recording, detection of the duplication of the broadcasting hours of a program by which timer reservation was made with the broadcasting hours after extension, and control that follows a predetermined priority, and records or displays a program was shown It is good also as composition to which the system controller 17 by the side of STB carries out these detection and control, and the same effect as the form 6 of the above-mentioned implementation is done so.

[072]

[Effect of the Invention] As mentioned above, [according to the digital broadcast record system concerning this invention (Claim 1)] Digital broadcast is received. The signal of one transponder is chosen from the received digital broadcast signal. The signal of one channel is chosen from the signal of the one above-mentioned transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs, In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of this receiving terminal equipment When the control signal which should change the channel chosen by the above-mentioned transport decoder to another channel from the channel chosen now is received Since it had composition equipped with a detection means to detect whether the above-mentioned recording equipment is recording the signal of the channel chosen now, and an alarm display means to display this when this detection means detects what the above-mentioned recording equipment is recording Before a user knows, the signal outputted to recording equipment changes from receiving terminal equipment, and it is effective in it being avoidable un-arranging [that a different program from the program which asks for recording will be recorded].

[073] Moreover, [according to the digital broadcast record system concerning this invention (Claim 2)] Digital broadcast is received. The signal of one transponder is chosen from the received digital broadcast signal. The signal of two or more channels is chosen from the signal of the one above-mentioned transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder outputted from a port different, respectively and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs, In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of this receiving terminal equipment When the control signal which should change the transponder chosen by the above-mentioned tuner to another transponder from the transponder chosen now is received A detection means to detect whether the above-mentioned recording equipment is recording the signal of one channel of the transponders chosen now, Since it had composition equipped with an alarm display means to display this when this detection means detected what the above-mentioned recording equipment is recording Before a user knows, the signal outputted to recording equipment changes from receiving terminal equipment, and it is effective in it being avoidable un-arranging [that a different program from the program which asks for recording will be recorded].

[074] Moreover, [according to the digital broadcast record system concerning this invention (Claim 3)] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal

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f, the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. The 1st timer of the above and the 2nd timer at least one of timers] Since it had composition also holding the reservation information reserved in the timer of another side The recording time of the program recording separately reserved in each timer overlaps, and [cannot record as reservation or] There is an effectively avoidable effect about that the channels of the digital program by which recording reservation was made by the timer by the side of the digital program by which display reservation was made by the timer of receiving terminal equipment, and recording equipment differ, and broadcasting hours overlap, and recording or a display cannot be performed as reservation.

0075] Moreover, [according to the digital broadcast record system concerning this invention Claim 4)] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When the 1st timer of the above has the input of program recording reservation, the reservation execution time of the program recording reservation concerned is compared with the reservation execution time of the program recording reservation already performed by the 2nd timer of the above. Since it had composition equipped with a detection means to detect whether duplication of program recording time arises, it is effective in the ability of a user to realize the digital broadcast record system which can avoid duplication reservation of program recording effectively.

0076] Moreover, [according to the digital broadcast record system concerning this invention Claim 5)] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving

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terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When the 2nd timer of the above has the input of program recording reservation, the reservation execution time of the program recording reservation already performed by the reservation execution time, the 1st timer of the above, or the 2nd timer of the program recording reservation concerned and program display reservation is compared. Since it had composition equipped with a detection means to detect whether duplication of reservation execution time arises, it is effective in the ability of a user to realize the digital broadcast record system which can avoid duplication reservation of program recording effectively.

0077] Moreover, [according to the digital broadcast record system concerning this invention Claim 6)] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs. In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of the above-mentioned receiving terminal equipment When reservation of the output program of the above-mentioned receiving terminal equipment is made with the timer which performs program recording reservation of digital broadcast, and the above-mentioned timer, just before execution of the reservation concerned A detection means to detect whether it is in a state with the above-mentioned receiving terminal equipment able to output the signal of the reservation purpose program. Since it had composition equipped with an alarm display means to display this when it detected that it is in a state with the above-mentioned receiving terminal equipment unable for this detection means to output the signal of the reservation purpose program It is effective in it being avoidable un-arranging [that the program of the intention of a program no longer being suddenly displayed while on display, or recording is no longer recorded, and timer reservation becomes impracticable against a user's will against a user's will].

0078] Moreover, [according to the digital broadcast record system concerning this invention Claim 7)] The signal of a predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving

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terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When program recording reservation of digital broadcast is performed to the 2nd timer of the above. The check of whether there is no broadcast time of the recording purpose program just before the recording start by the program recording reservation concerned, and there is any change in a broadcast channel is performed to the above-mentioned receiving terminal equipment. Since it had composition equipped with a means to change the information on the program recording reservation concerned of the 2nd timer of the above when there was change, based on the control signal for the reservation execution which the 2nd timer outputs, it is effective in the ability to record the recording purpose program certainly.

0079] Moreover, [according to the digital broadcast record system concerning this invention Claim 8)] The signal of a predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When there is change to a means to acquire EPG information from the above-mentioned receiving terminal equipment, and to memorize this, and the broadcast time or the broadcast channel of the digital program by which program recording reservation is performed to the 2nd timer of the above. Since it had composition equipped with a means to change the information on the program recording reservation concerned of the 2nd timer of the above, based on the control signal for the reservation execution which the 2nd timer outputs, it is effective in the ability to record the recording purpose program certainly.

0080] Moreover, [according to the digital broadcast record system concerning this invention Claim 9)] The signal of a predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving

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terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When the broadcasting hours of the digital program which the above-mentioned receiving terminal equipment under present recording outputs in said recording equipment extend, it is detected whether the time to the end of a program of the program concerned overlaps the broadcasting hours of the program by which program recording reservation or program display reservation is made at the 1st or 2nd timer of the above. Since it is a composition equipped with a control means to perform the recording or a display of a program according to a predetermined priority when overlapping. When there is extension of the broadcasting hours of the digital program under record and the broadcasting hours of a program and duplication by which timer reservation was made arise, it is effective in the ability to perform automatic more desirable program recording or a program display.

Translation done.]

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